

Amendments to the Claims

These claims will replace all prior versions, and listings, of claims in the application:

1. (previously presented) A method for sharing the bandwidth over a wireless channel between a plurality of first stations and a plurality of second stations in a wireless local area network (WLAN) having an access point (AP), the method comprising:

periodically transmitting, by said AP, a control frame comprising data indicative of a predetermined time interval during which each of said first stations can occupy the wireless channel for the data transmissions onto said wireless channel;

determining, by said AP, whether said predetermined time interval specified in said control frame is longer than an interval of time following receipt of a last frame from one of said first stations and before a scheduled start of a set of next frames from at least one of said second stations;

if so, waiting, by said AP, for a point interframe spacing interval (PIFS) after which said next frames from said second stations are permitted to transmit to said AP over said wireless channel; and,

inhibiting transmission from said plurality of first stations to said AP.

2. (previously presented) The method of claim 1, further comprising permitting said plurality of second stations to transmit a data packet to said AP over said wireless channel, said data packet including a shorter duration than said predetermined time period specified in said control frame.

3. (previously presented) The method of claim 1, wherein, if said predetermined time interval specified in said control frame is less than said interval of time before the scheduled start of said next frame, transmitting, by said AP, a data packet to said plurality of first and second stations over said wireless channel, said data packet including a shorter duration than said predetermined time period specified in said control frame.

4. (previously presented) The method of claim 1, wherein, if said predetermined time interval specified in said control frame is less than said interval of time before the scheduled start of said next frame, permitting said plurality of first stations to transmit a data packet to said AP over said wireless channel, said data packet including a shorter duration than said predetermined time period specified in said control frame.

5. (previously presented) The method of claim 1, further comprising :

- determining whether said wireless channel between said AP and said plurality of first and second stations is available;
- if so, inhibiting transmission from the plurality of said first stations to said AP;
- transmitting, from said AP to said plurality of first stations, a high priority signal indicative of a duration that said plurality of second stations is allowed to occupy said wireless channel; and
- permitting said plurality of second stations to transmit a data packet to said AP over said wireless channel, said data packet including a shorter duration than said predetermined time period specified in said control frame.

6. (original) The method of claim 1, wherein said plurality of first stations includes 802.11 compliant systems.

7. (original) The method of claim 1, wherein said plurality of second stations includes HIPERLAN/2 compliant systems.

8. (original) The method of claim 1, wherein said plurality of first stations can transmit data frames without permission from said AP and said plurality of second stations can transmit data frames when permitted by said AP.

9. (previously presented) A method for sharing the bandwidth over a wireless channel between a plurality of first stations and a plurality of second stations in a wireless local area network (WLAN) having an access point (AP), the method comprising the steps of:

transmitting a control frame having a contention free period (CFP) mode and a contention period (CP) mode, said control frame including data indicative of a predetermined time interval that each of said first stations has to complete data transmission onto said wireless channel;

determining whether said wireless channel between said AP and said plurality of first and second stations is available;

if said wireless channel is available during said CP mode, polling at said AP to inhibit transmission of said plurality of first stations over said wireless channel;

determining, by said AP, whether said predetermined time interval specified in said control frame is longer than an interval of time following receipt of a last frame from one of said first stations and before a scheduled start of a set of next frames from at least one of said second

stations;

if so, determining a range of time $[t_1, t_2]$ to control said wireless channel by said AP; and
controlling said wireless channel within said time range to permit said plurality of
second stations to transmit a data packet, said data packet including a shorter duration than said
predetermined time interval specified in said control frame.

10. (canceled)

11. (previously presented) The method of claim 9, wherein said range of time is determined
according to the following equation.

$$[t_1, t_2] = [-1 * (TXOP_Limit + QoS\ CF-Poll\ frame\ duration + SIFS), \\ -1 * QoS\ CF-Poll\ frame\ duration + SIFS],$$

wherein *TXOP_Limit* represents said predetermined time period that said plurality of first
stations can transmit data frames after said wireless channel is determined to be available,
QoS CF-Poll frame duration represents the duration of a QoS CF-Poll frame used to instruct said
AP to inhibit transmission from said plurality of first stations, and *SIFS* represents the duration of
a Short Interframe Space interval.

12. (previously presented) The method of claim 9, wherein, if said wireless channel is
unavailable, permitting said plurality of second stations to transmit a data packet to said AP over
said wireless channel immediately when said wireless channel becomes available.

13. (previously presented) The method of claim 9, wherein, if said predetermined time

interval specified in said control frame is less than said interval of time before the scheduled start of said next frame, transmitting, by said AP, a data packet to said plurality of first and second stations over said wireless channel, said data packet including a shorter duration than said predetermined time period specified in said control frame.

14. (previously presented) The method of claim 9, wherein, if said predetermined time interval specified in said control frame is less than said interval of time before the scheduled start of said next frame, permitting said plurality of first stations to transmit a data packet to said AP over said wireless channel, said data packet including a shorter duration than said predetermined time period specified in said control frame.

15. (previously presented) The method of claim 9, wherein, if said wireless channel is available during said CFP mode, the method further comprises :

transmitting, from said AP to said plurality of first and second stations, a high priority signal indicative of a duration that said plurality of first and second stations is allowed to occupy said wireless channel; and,

permitting said plurality of second stations to transmit a data packet to said AP over said wireless channel, said data packet including a shorter duration than said predetermined time period specified in said control frame.

16. (original) The method of claim 9, wherein said plurality of first stations includes 802.11 compliant systems.

17. (original) The method of claim 9, wherein said plurality of first stations can transmit data frames without permission from said AP and said plurality of second stations can transmit data frames when permitted by said AP.

18. (previously presented) The method of claim 9, wherein said plurality of second stations includes HIPERLAN/2 compliant systems.

Claims 19 – 27. (canceled)